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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,627	11/27/2001	Takeshi Iwai	2001-1761A	8243

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EXAMINER

CHU, JOHN S Y

ART UNIT PAPER NUMBER

1752

DATE MAILED: 08/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/993,627

Applicant(s)

IWAI ET AL

Examiner

John S. Chu

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office action is in response to the amendment filed June 27, 2003.

1. The rejection under 35 U.S.C. 102(b) over HASEGAWA et al is withdrawn based on the points made by applicant wherein the prior art fails to teach a straight-chain alcohol, but instead teaches a branched-chain alcohol in the monomers used to make the polymer.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over HASEGAWA et al.

The claimed invention is drawn to a chemical amplification positive-working photoresist composition which comprises, as a uniform solution in an organic solvent:

(A) a resinous compound capable of being imparted with increased solubility in an aqueous alkaline solution by interacting with an acid;

(B) an acid-generating compound capable of generating an acid by irradiation with a radiation; and

(C) an organic solvent,

wherein the resinous compound as the component (A) is a copolymer consisting of the monomeric units to constitute the main chain structure thereof comprising (a1) acrylic or methacrylic acid ester units having a solubility-reducing group, (a2) monomeric units of an ester

Art Unit: 1752

compound between acrylic or methacrylic acid and a lactone ring-containing bridged polycyclic saturated alcohol and (a3) monomeric units of an ester compound between acrylic or methacrylic acid and a straight-chain alcohol substituted by a hydroxyl group, alkoxy group or acyl group.

HASEGAWA et al discloses a chemical amplification positive-working photoresist composition comprising an acid generating compound, an organic solvent and a resinous compound having three monomeric groups.

Applicant in their response of June 27, 2003 have correctly pointed out that the prior art lacks the monomeric group defined as (a3) in claim 1, wherein the monomeric unit of an ester [ester] compound between acrylic or methacrylic acid and a straight-chain alcohol substituted by a hydroxyl group, alkoxy group or acyl group. HASEGAWA et al on the contrary as correctly pointed out by applicant discloses a branched-chain alcohol that is reacted with an acrylic or methacrylic acid, thus failing to anticipate the claimed invention as recited.

Applicants are specifically directed to column 13, lines 1-39 for the disclosure of acid-labile side group of formula (L1), which are reacted with an acrylic or methacrylic acid. The list of groups includes straight and branched chain groups substituted with an alkoxy group. Clearly HASEGAWA et al teaches the functional equivalence of the straight and branched chain acid labile side groups, thus the interchangeable use of these group is known to the skilled artisan.

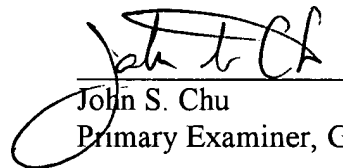
It would have been *prima facie* obvious to one of ordinary skill in the art of photoresist composition to use a monomer having straight-chain acid-labile group in place of the monomer of HASEGAWA et al having a branched-chain acid-labile group in the terpolymers of Examples I-24, I-25 and I-26 and reasonably expect same or similar results for a photoresist that has improved resolution, and etch resistance over prior art compositions.

Art Unit: 1752

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (703) 308-2298. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for this Group is (703) 305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.


John S. Chu
Primary Examiner, Group 1700

J.Chu
August 25, 2003